## REMARKS/ARGUMENTS

In response to the Office Action in which the Examiner objected to claims 1, 3, 7 and 9 for certain informalities, applicants have amended those claims in accordance with the suggestions of the Examiner.

In the Office Action, the Examiner has provisionally rejected claims 1-3, 6 and 8 based on the judicially created (non-statutory) doctrine of obviousness-type double patenting in view of commonly-assigned, co-pending U.S. Patent Application No. 10/209,547. Applicants respectfully disagree that the claims of the present application are obvious in view of the claims of the referenced co-pending application. Applicants, however, have submitted a terminal disclaimer herewith in order to expedite prosecution of the presently claimed invention.

In the Office Action, the Examiner also rejected independent claims 1 and 9 under 35 U.S.C. § 102(e) as being anticipated by United States Patent Application No. 09/259,681 (Publication No. US 2001/0012321) to Terry et al. Applicants respectfully disagree that Terry et al. anticipates the present invention. Terry et al. optimizes the power spectral density (PSD) of a DSL system in order to minimize the effects of crosstalk in other DSL systems. There are two important differences between Terry et al. and claims 1 and 9 of the present invention.

Claims 1 and 9 of the present invention require that the power spectral density of the noise present on a subscriber loop be correlated with a predetermined set of power spectral densities for a group of possible crosstalk disturbers. Nowhere in Terry et al. is such a correlation step claimed or disclosed. Terry et al. simply discusses a "comparison." In the present invention the step of correlating the power spectral density in the frequency domain is clearly disclosed in the specification as an important feature of the present invention (p. 11, line 6 to p. 11, line 18). Equally as important is the disclosure of the predetermined set of power spectral densities for a group of possible crosstalk disturbers. "Each basis set of crosstalk PSDs is generated from a single canonical set of measured string pair-to-pair crosstalk couplings and a specific type of transmitted DSL PSD. Each type of transmitted DSL PSD is multiplied by all of the canonical crosstalk couplings to generate a basis set for that DSL." (p. 11, line 19 to p. 14, line 2). Terry et al. only performs crosstalk identification when there is only a single crosstalker into any given system, and only one crosstalk coupling. Thus, Terry has only one "template" for each DSL type. By contrast, the invention of claim 1 requires a "predetermined set of power spectral densities for a group of possible crosstalk disturbers." The current application uses many canonical measured pair-to-pair crosstalk

couplings to generate many members of the basis set of received crosstalk PSDs for each DSL type providing improved performance.

The Examiner has rejected dependent claim 10 under 35 USC 103(a), over Terry et al. in view of United States Patent No. 6,101,172 to van Bavel et al. The Examiner states that van Bavel et al. overcomes the deficiency of Terry et al. related to its lack of teaching the subtraction of "the power spectral density (PSD) of the selected crosstalk disturber from the determined PSD of the subscriber loop using spectral subtraction to generate a residual (i.e., a margin) PSD". Applicants respectfully submit that van Bavel does not overcome this alleged deficiency and that neither Terry et al. nor van Bavel, alone or in combination, teach or suggest the invention of claim 10. The van Bavel reference discloses an HDSL2 system that performs no crosstalk estimation, crosstalk identification or spectral subtraction. Figure 1 of van Bavel is a block diagram of an HDSL2 transmission system with an echo canceller, which cancels echo in the time-domain and has nothing to do with crosstalk identification or spectral subtraction of identified crosstalk. Table 3 of van Bavel subtracts the calculated performance of two HDSL2 systems in order to compare them. These are not spectra and there is no spectral subtraction. The Examiner has failed to point to any discussion of crosstalk identification and reduction through spectral subtraction in either Terry or van Bavel.

The Examiner has rejected dependent claim 11 under 35 USC § 103(a) over Terry et al. and van Bavel et al. further in view of United States Patent No. 6,529,906 to Chan. The Examiner states that Terry and van Bavel do not teach the mapping of negative power spectral densities into a non-negative value and that Chan teaches such a mapping function. Chan is a patent related to hash codes used to quickly index variables for use in database lookups. There is no relationship between the subject matter of Chan and the present invention. The invention in Chan is not an "electronic communications system" as posited by the Examiner.

The subject matter of dependent claim 11 is specific to the mapping of negative PSD's into non-negative values as discussed in the specification at pages 15-16. This is neither taught nor suggested by Chan. The mapping of negative values to non-negative values may generally be known but, obviously, this is not what dependent claim 11 is claiming. Dependent claim 11 is targeting a specific problem arising due to spectral subtraction wherein negative residual power spectral densities occur.

Applicants believe that claims 1-12 as amended are now in condition for allowance and reconsideration of and allowance of such claims is respectfully requested.

Respectfully submitted,
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